

Occupational Employment Statistics

Federal Economic Statistics Advisory
Committee

Laurie Salmon

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USING OES DATA TO MEASURE INEQUALITY

OES data overview

The Occupational Employment Statistics program:

- Sample
 - ▶ 1.2 million business establishments
 - ▶ Employing 76 million workers (unweighted)
- Establishments are asked to provide the occupation and wages of each employee by Standard Occupational Classification and wage range
- Sample is stratified by industry and area

Advantages of OES Data

- Employment and wage estimates:
 - ▶ For over 800 occupations
 - ▶ For the nation as a whole
 - ▶ For individual states
 - ▶ For nearly 600 metropolitan and nonmetropolitan areas
 - ▶ For over 400 industry classifications
 - ▶ Provides employment and mean, 10th, 25th, median, 75th, and 90th percentile wages

Disadvantages of using OES data for measuring inequality

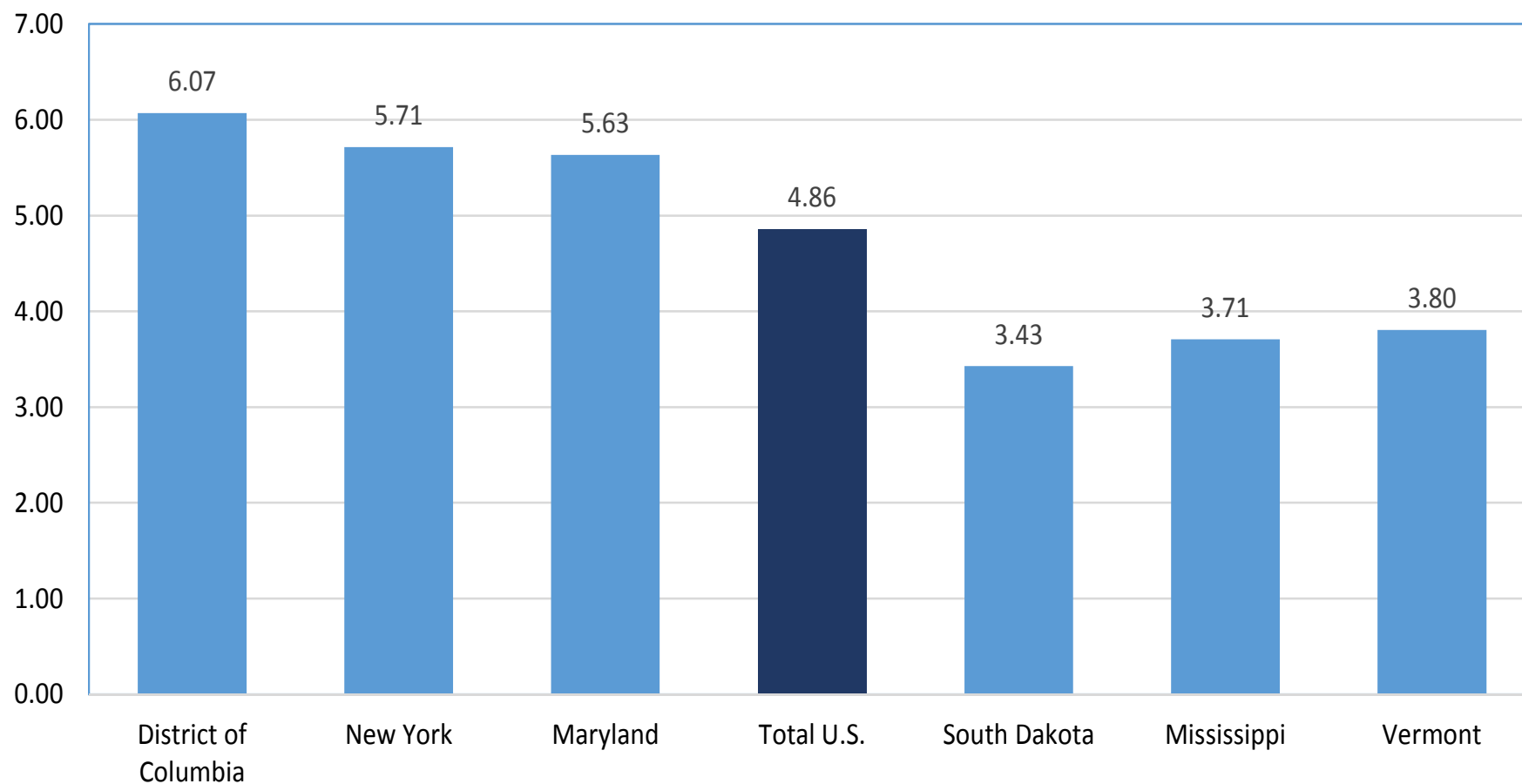
- Wage and salary workers only, not self-employed
- Wages are measured in intervals, with lowest and highest intervals below \$9.25 and over \$100 per hour, respectively
- Not designed to be a time series
 - ▶ It takes 3 years to collect the data
 - ▶ Breaks in series
 - ▶ Sometimes time series comparisons can be made when there are no breaks in series and data are at least three years apart

Measures

- OES economists John Jones, Elizabeth Cross, and Chris Cunningham are looking at:
 - ▶ Differences by states and metropolitan areas
 - ▶ Differences by industry and occupation
 - ▶ Changes in percentile wages over time

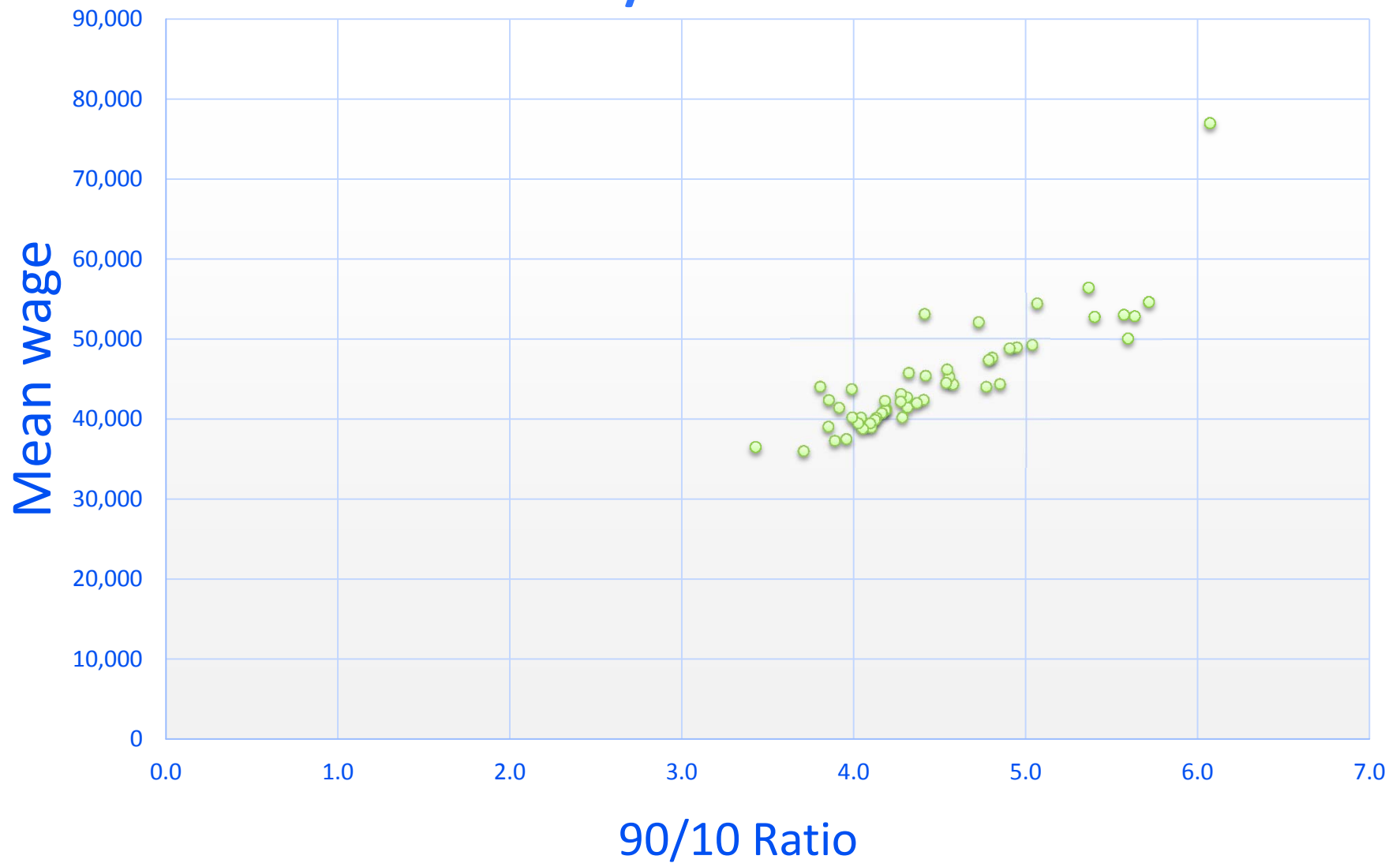
**MEASURING
THE RATIO OF THE
90TH PERCENTILE WAGE
TO THE 10TH PERCENTILE
AND 75TH TO 25TH**

States with largest and smallest 90th/10th percentile wage ratios, May 2013



- Ten states and DC had 90/10 ratios above U.S. ratio
- Ten states had 90/10 ratios below 4.0

States with higher mean wages have higher 90/10 ratios



90/10 Ratios, Selected Metropolitan Areas

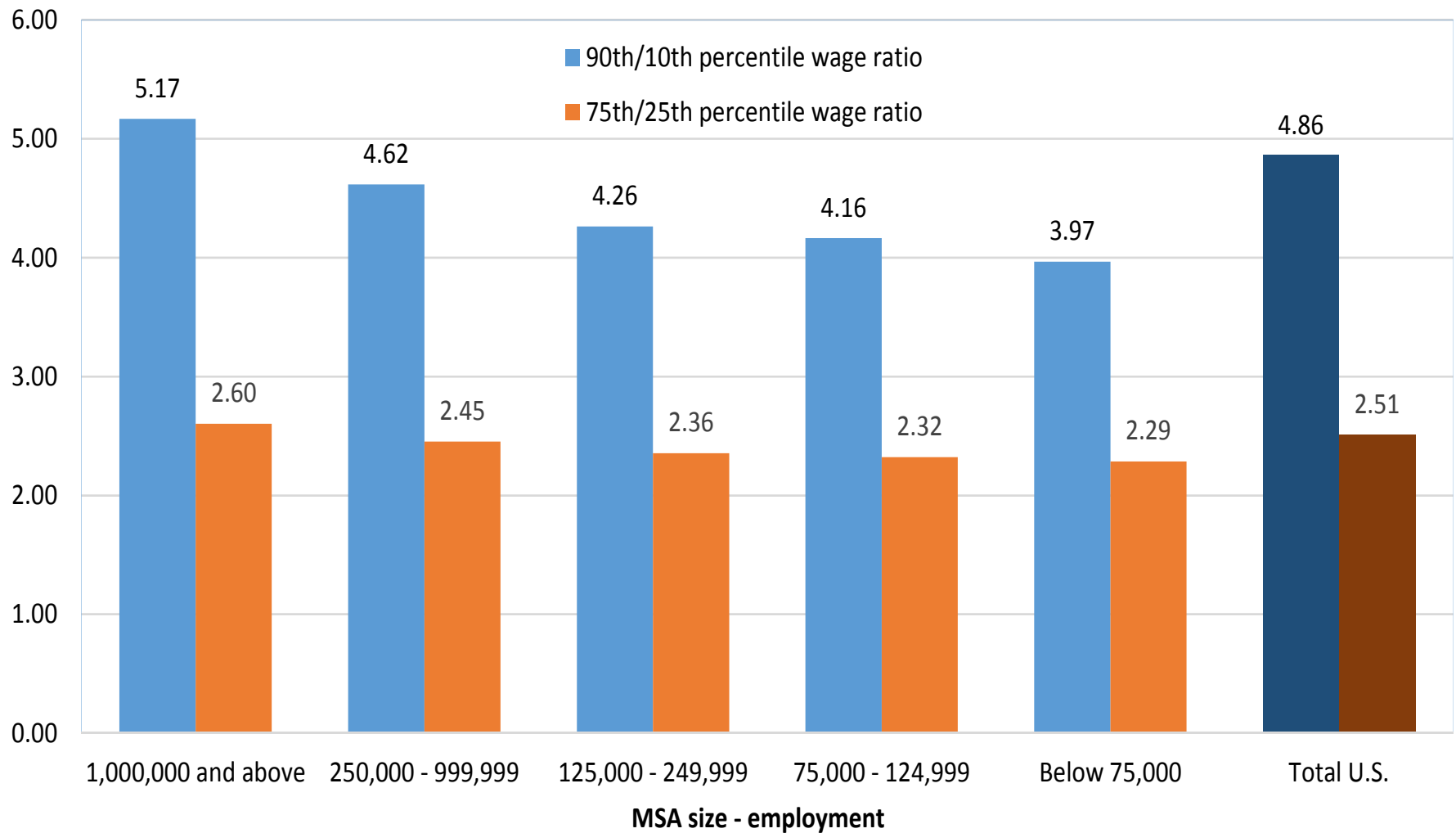
Above 6:

- San Jose
- Washington
- New York
- Huntsville, AL
- San Francisco
- Oakland

Below 4.5:

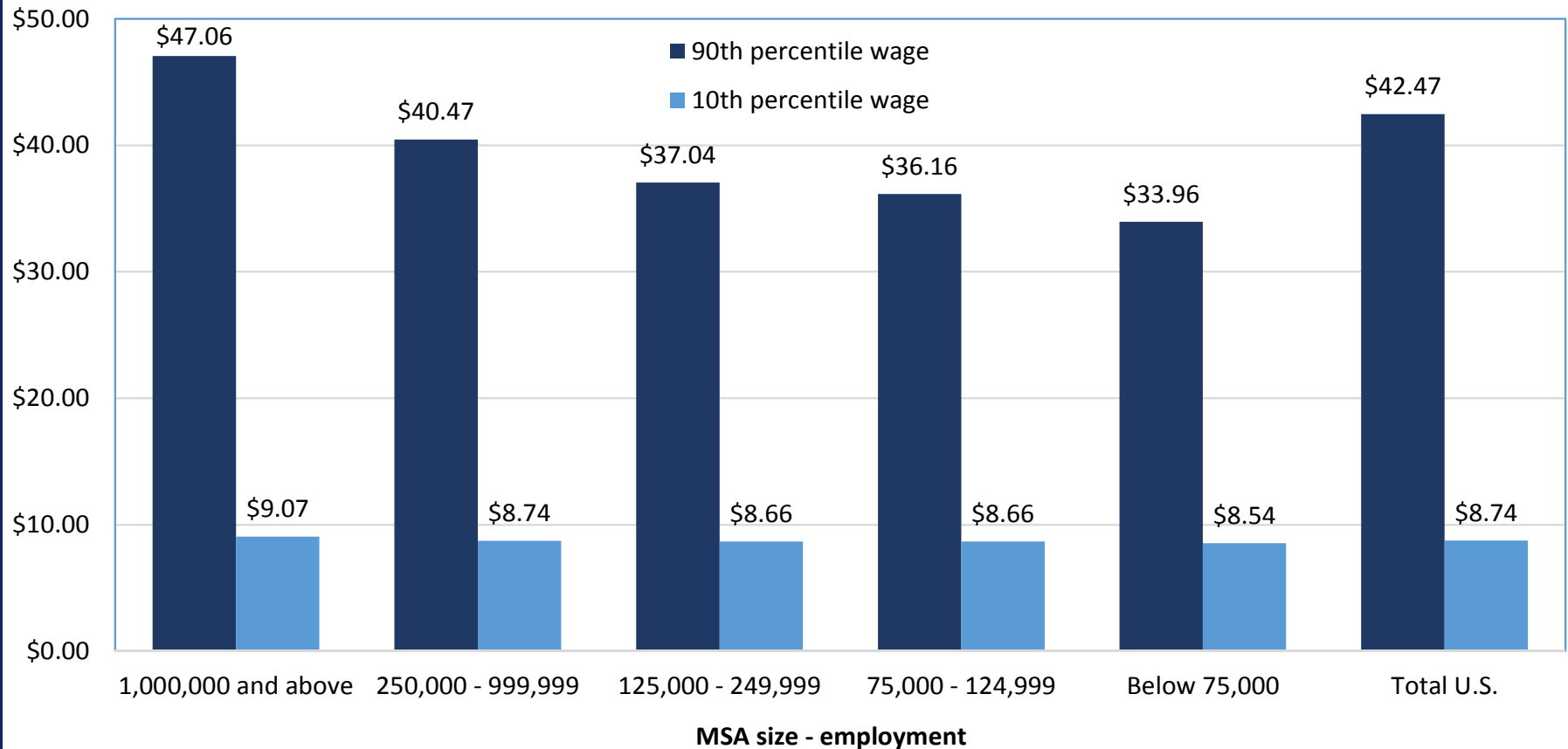
- Orlando
- Tampa
- Cleveland
- Pittsburgh
- Miami
- Scranton
- Myrtle Beach, NC
- Morristown, TN

Chart 1. Average wage ratios by MSA size, May 2013



- 90/10 wage ratio increases as MSA size increases
- 75/25 wage ratio is more stable

Average 90th and 10th percentile wages by MSA size, May 2013



- Substantial increase in 90th percentile wages as MSA size increases
- Small increase in 10th percentile wages as MSA size increases

Average 75th and 25th percentile wages by MSA size, May 2013

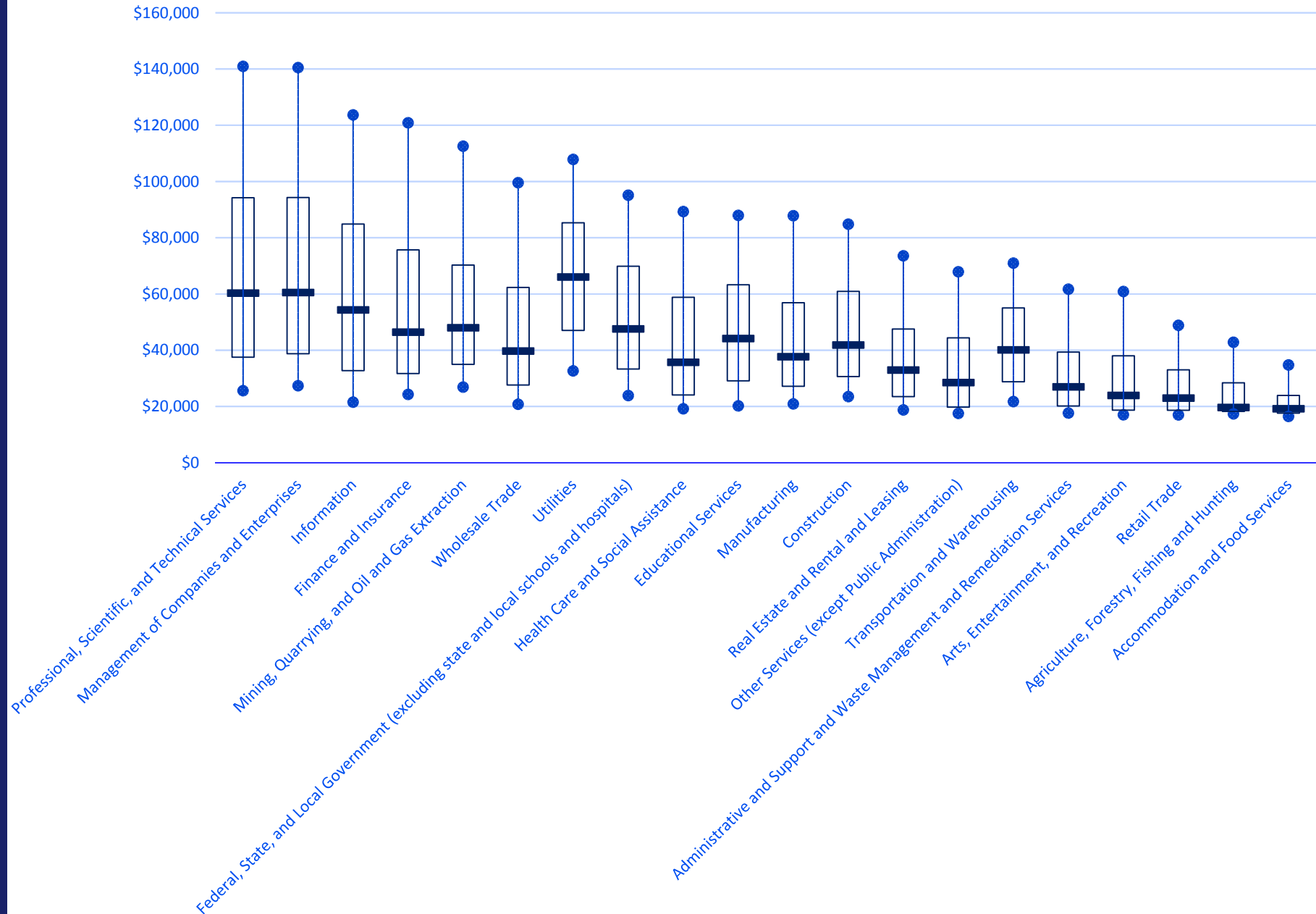


- Noticeable increase in 75th percentile wage as MSA size increases
- Small increase in 25th percentile wage as MSA size increases, but larger than the 10th percentile wage increase

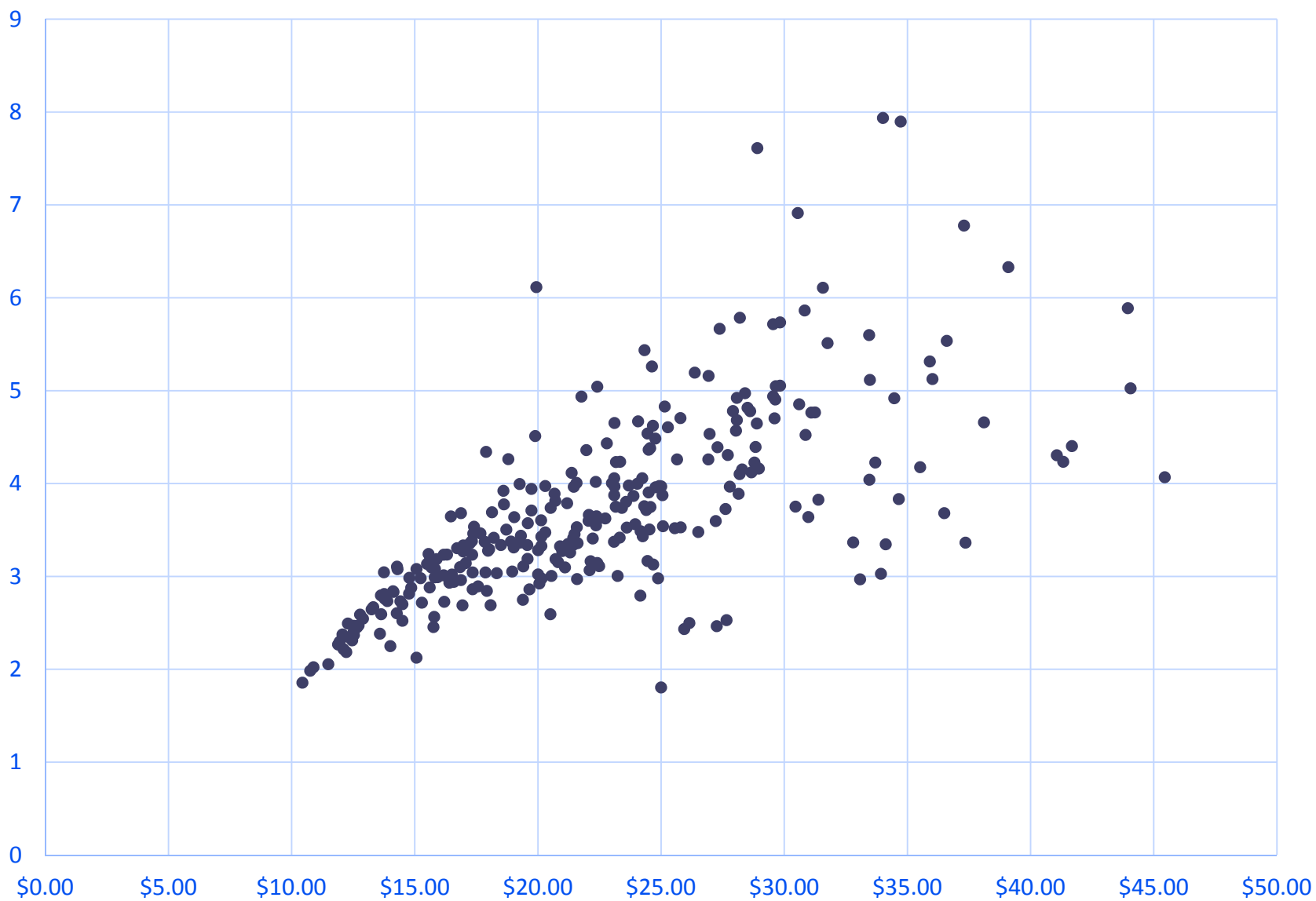
90/10 Ratio by Industry Sector



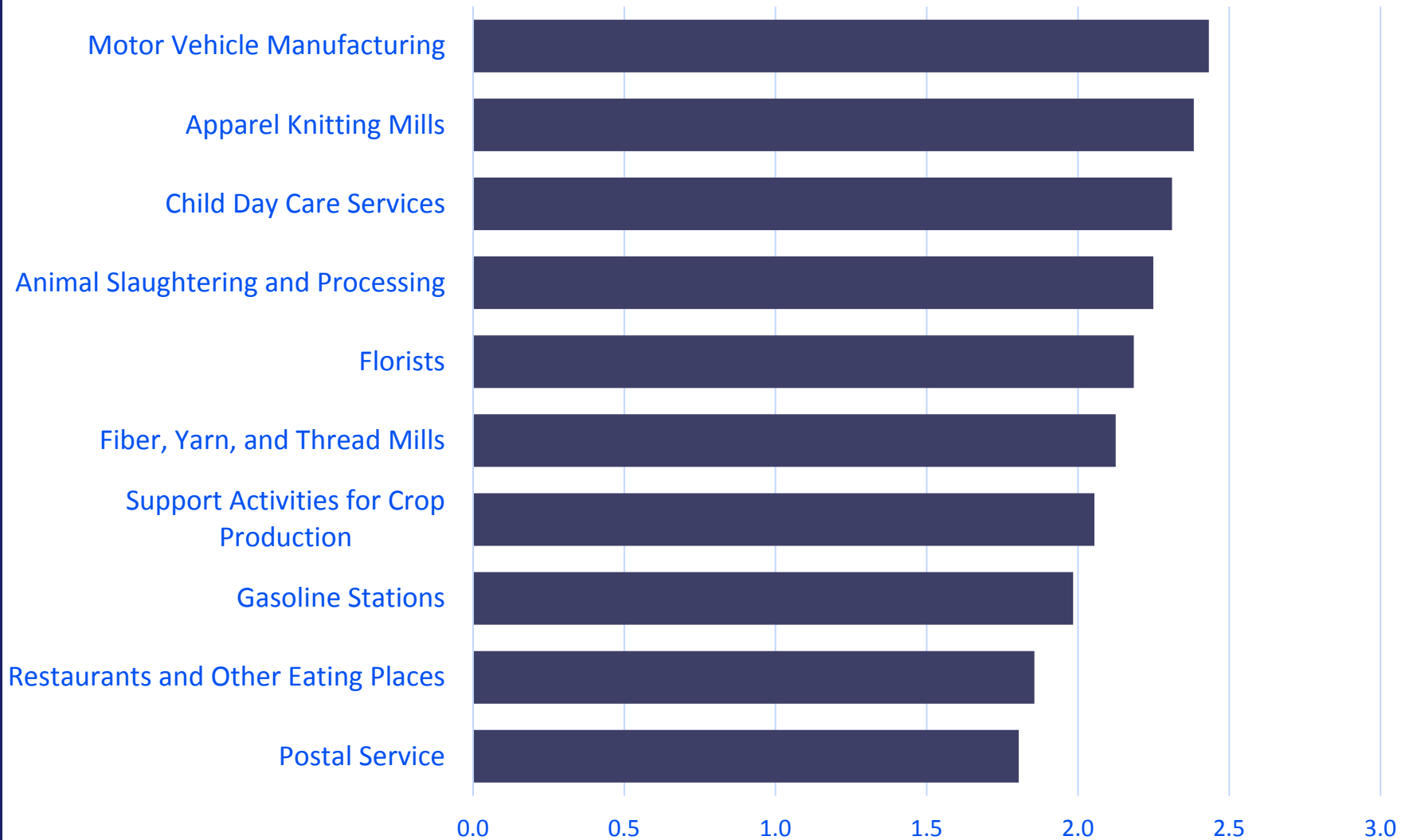
Wage Percentiles by Industry Sector, 2013



NAICS 4-digit industry hourly mean wage and 90/10 ratio



Selected industries with 90/10 ratios below 2.5, May 2013

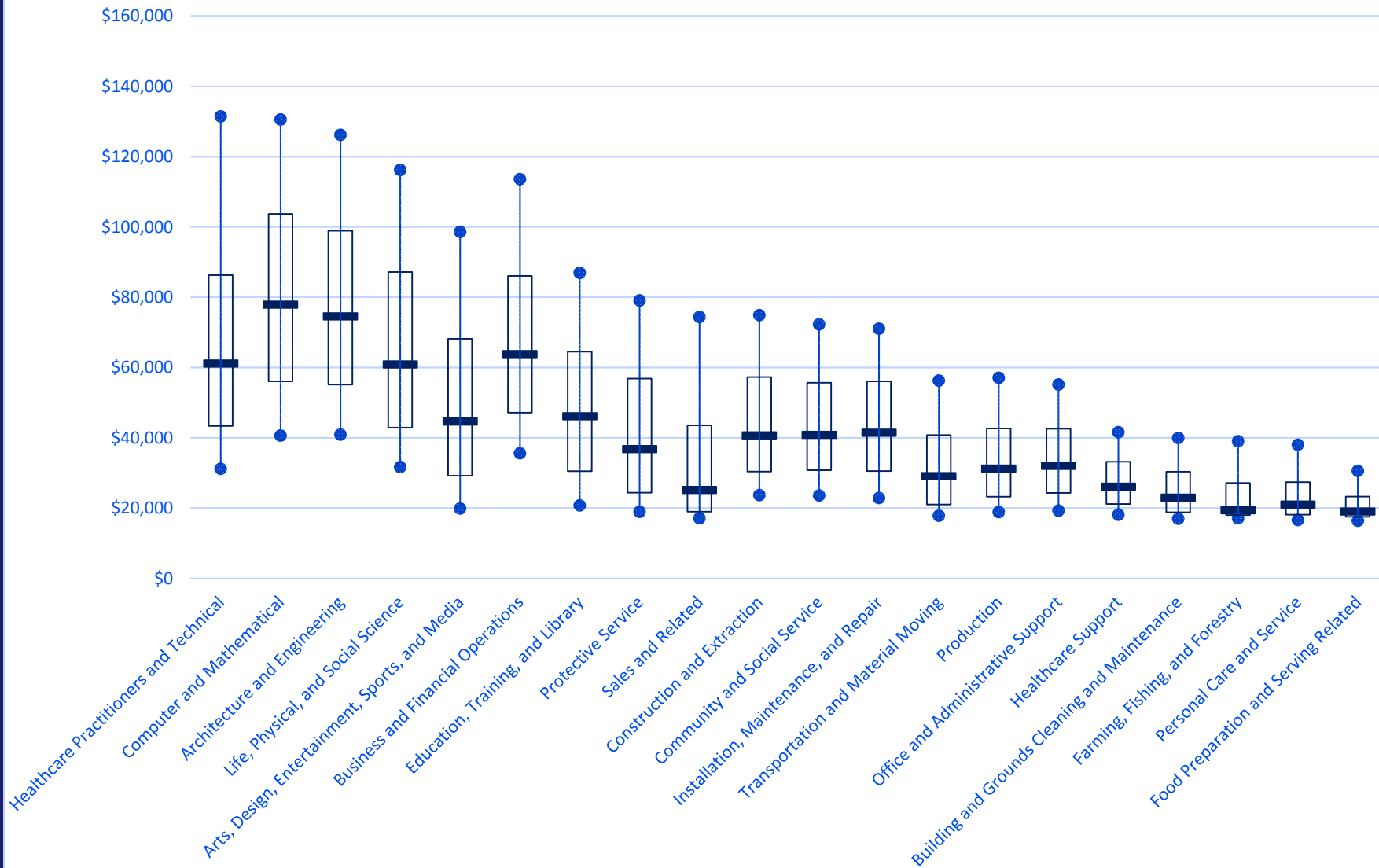


Industries with highest 90/10 ratios

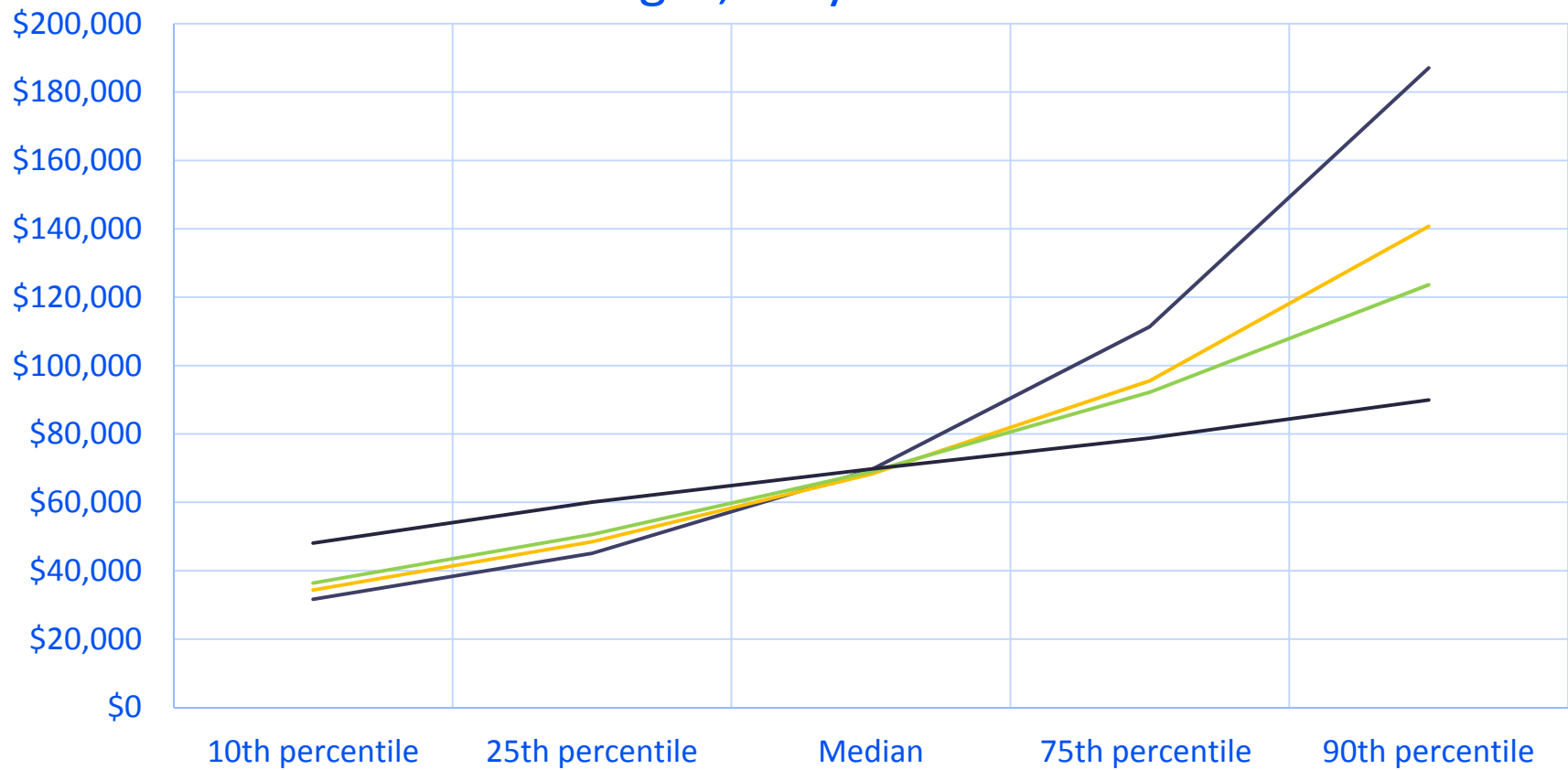


Differences within and between occupations

Wage percentiles by major occupational group, May 2013

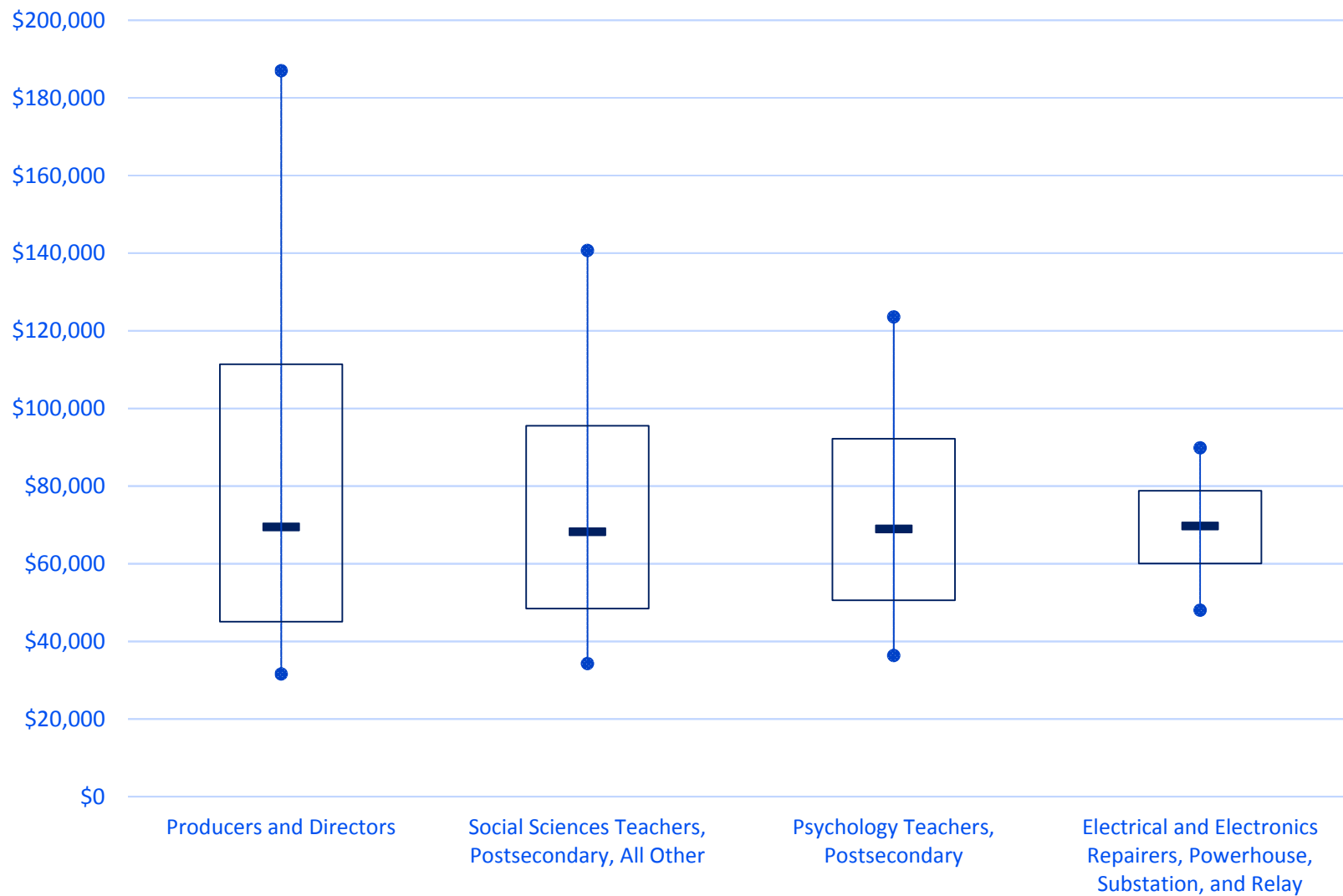


Percentile wages of occupations with similar median wages, May 2013

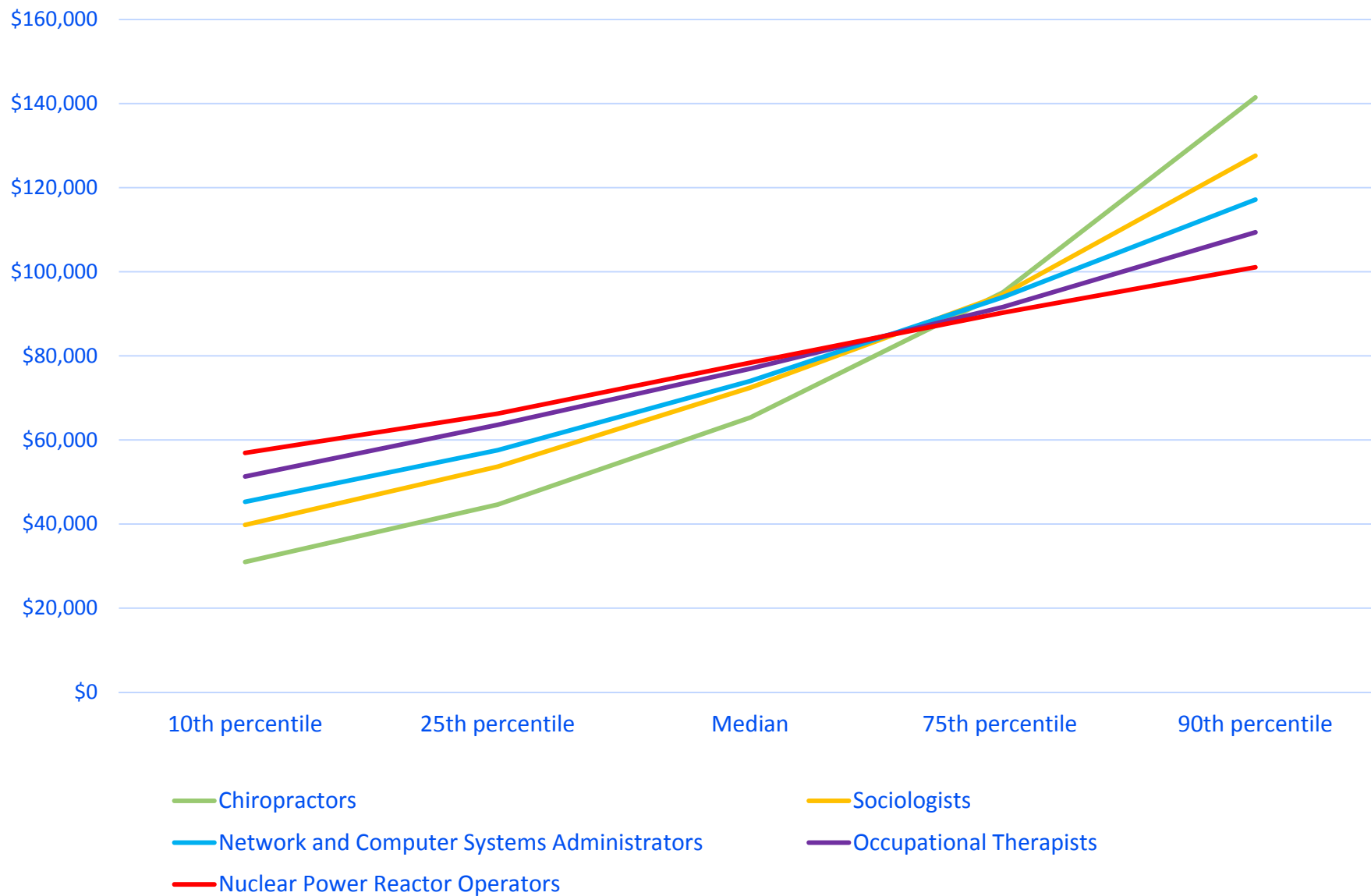


- Producers and Directors
- Social Sciences Teachers, Postsecondary, All Other
- Psychology Teachers, Postsecondary
- Electrical and Electronics Repairers, Powerhouse, Substation, and Relay

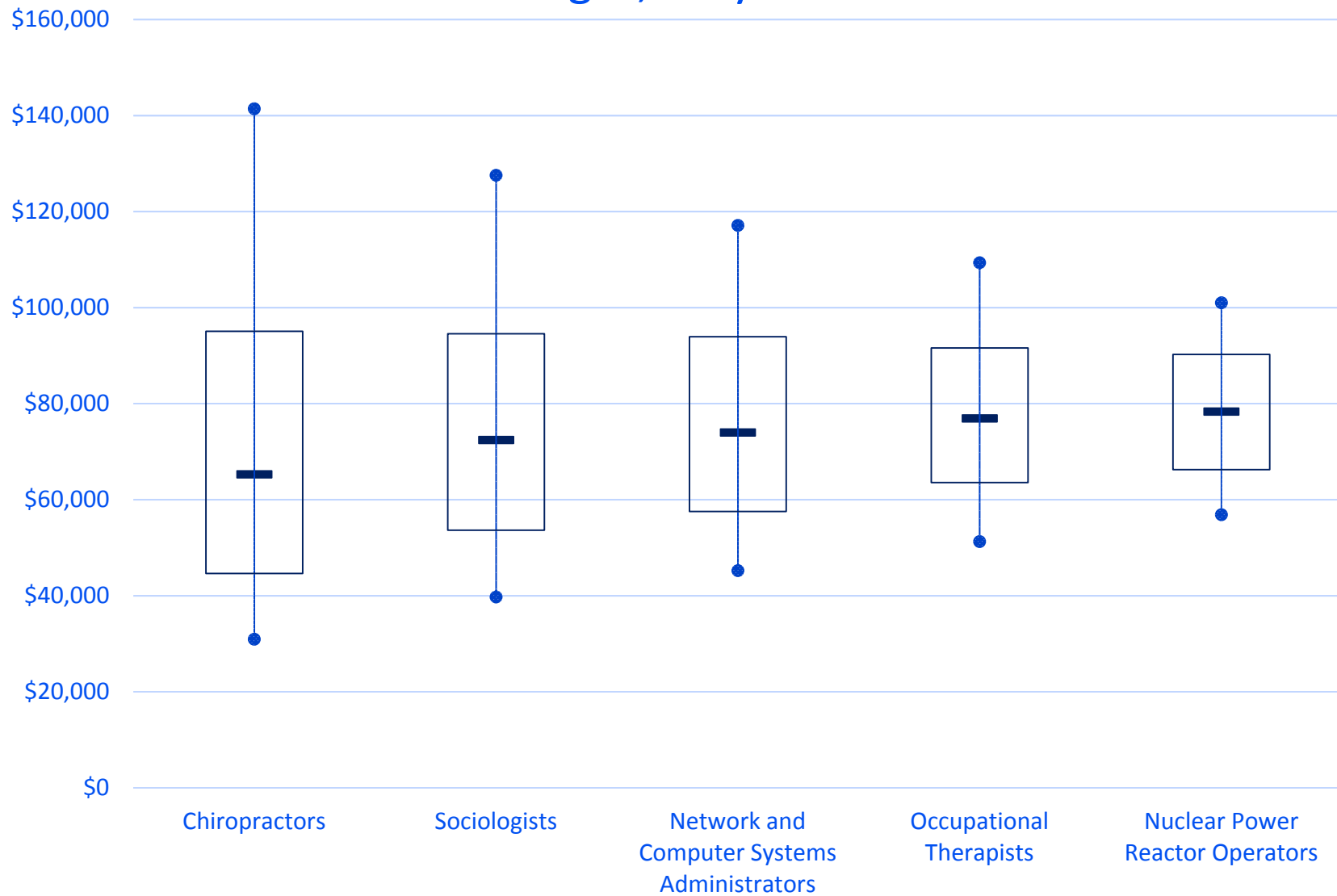
Percentile wages of occupations with similar median wages, May 2013



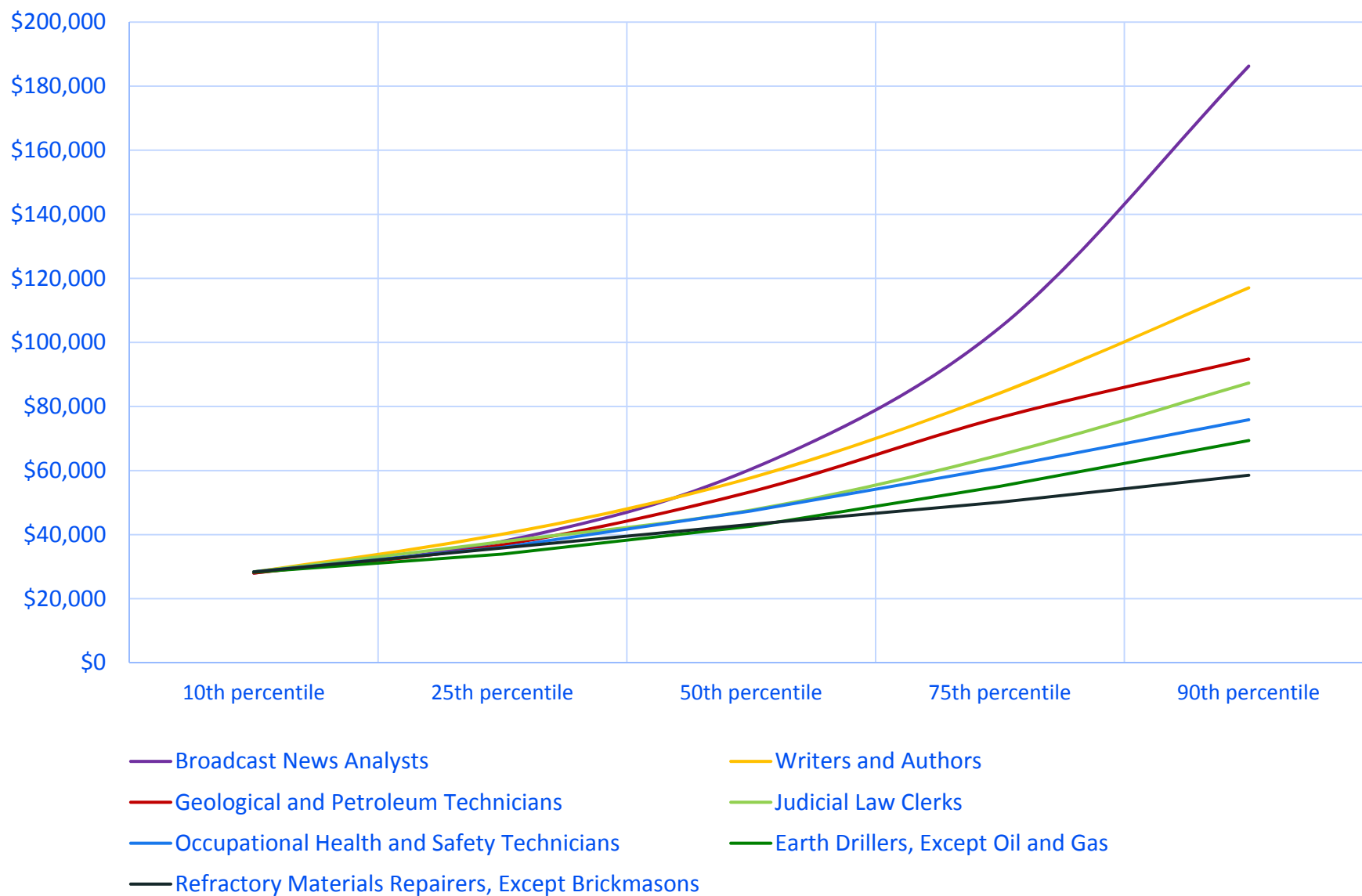
Percentile wages of occupations with similar mean wages, May 2013



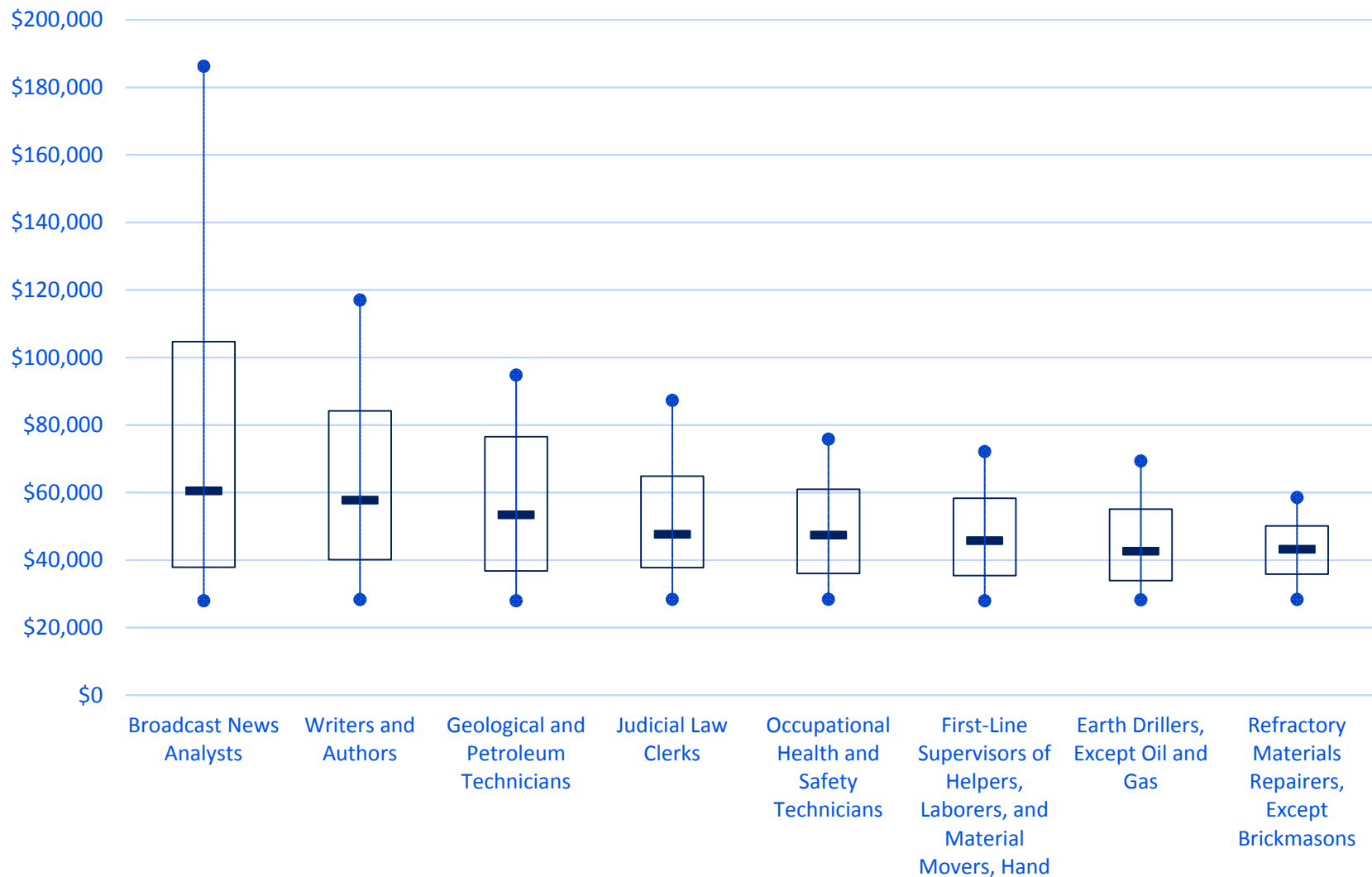
Percentile wages of occupations with similar mean wages, May 2013



Percentile wages of occupations with similar 10th percentile wages, May 2013



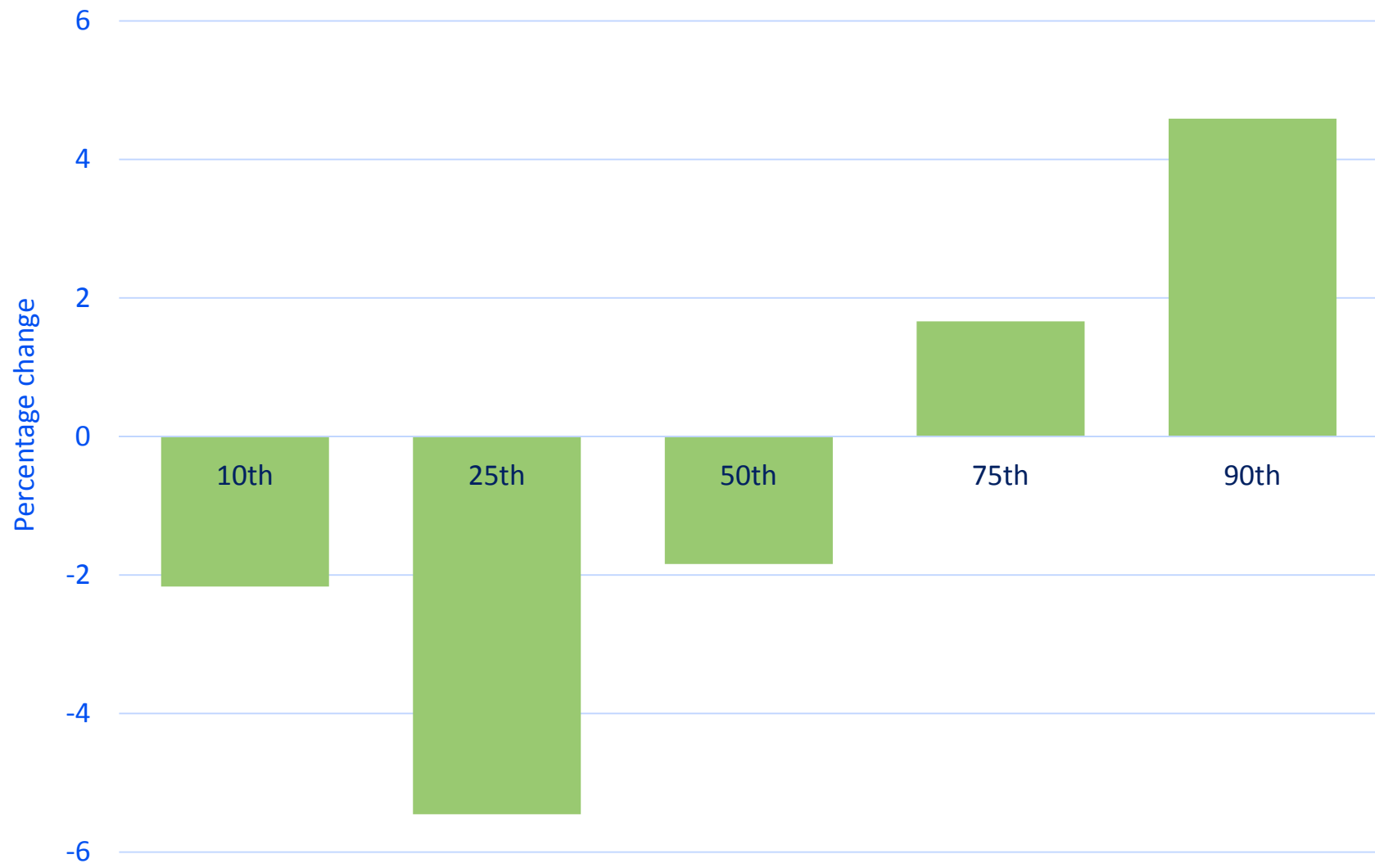
Percentile wages of occupations with similar 10th percentile wages, May 2013



CHANGE IN PERCENTILE WAGES, 2003-2013



Percentage change in real wages by percentile wage, 2003 to 2013

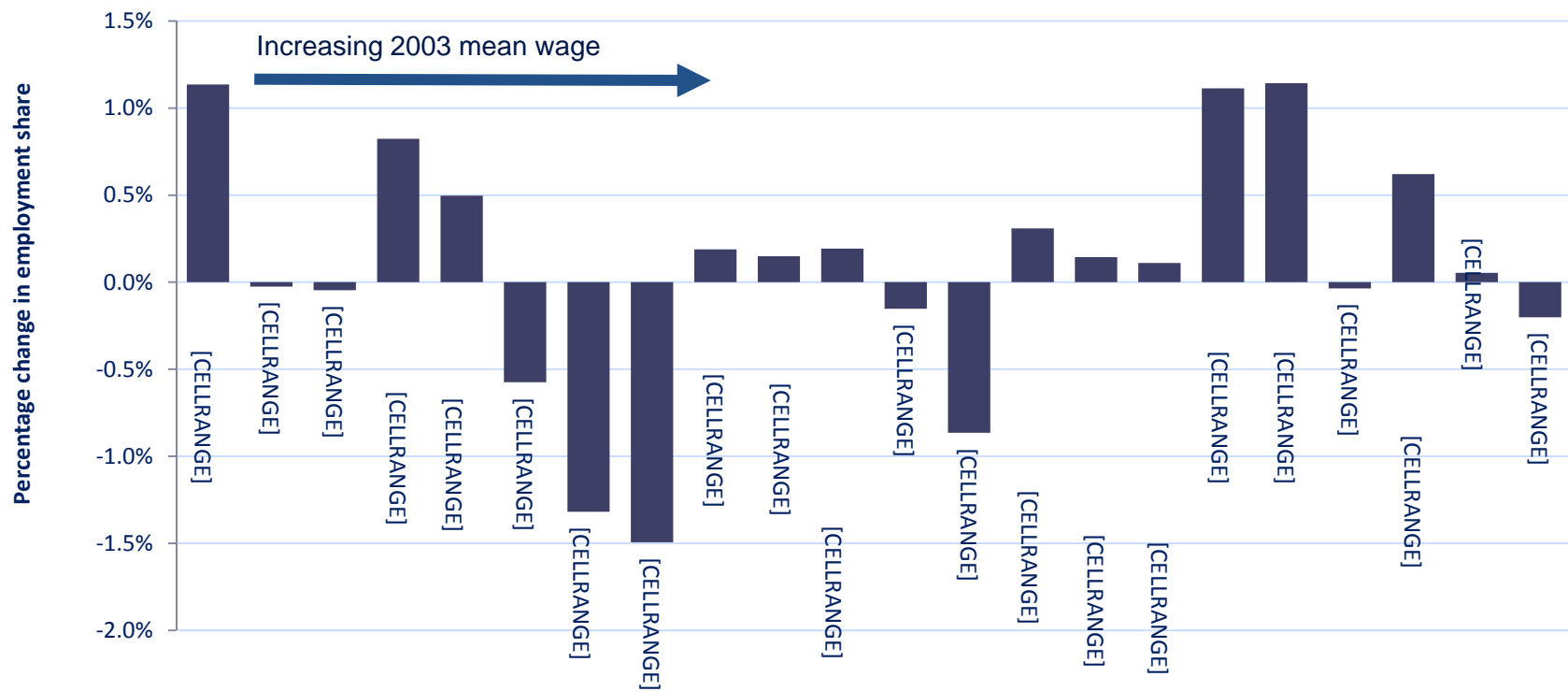


Real wages fell for low-wage occupational groups and rose for high-wage occupational groups

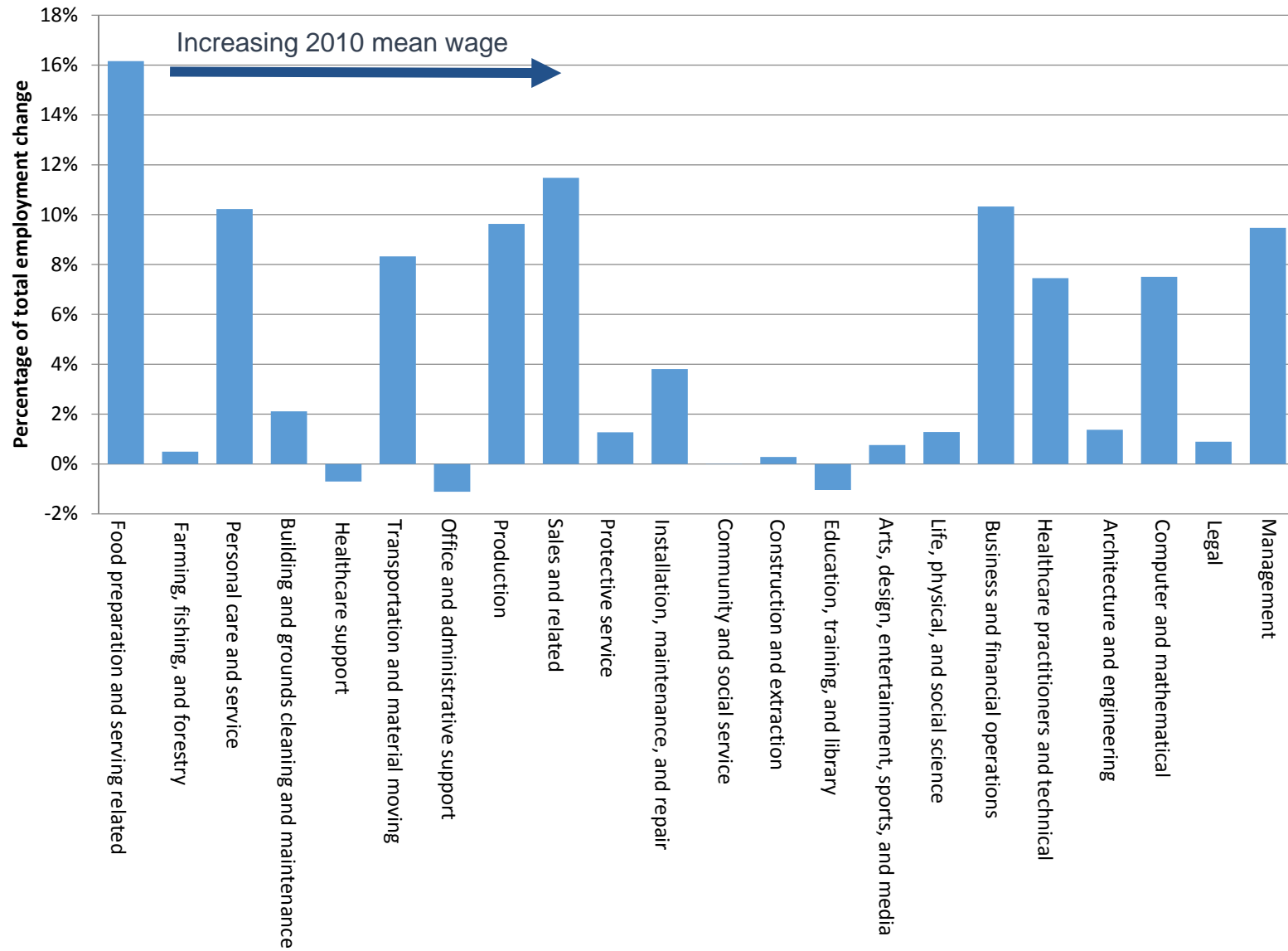


Growth in employment was concentrated in high- and low-wage occupations, with a hollowing out of the middle

Percent change in employment share from 2003-2013, by occupational group, ranked by initial mean wage



**Percent of total 2010-2013 employment growth in each occupational group,
ranked by initial mean wage**



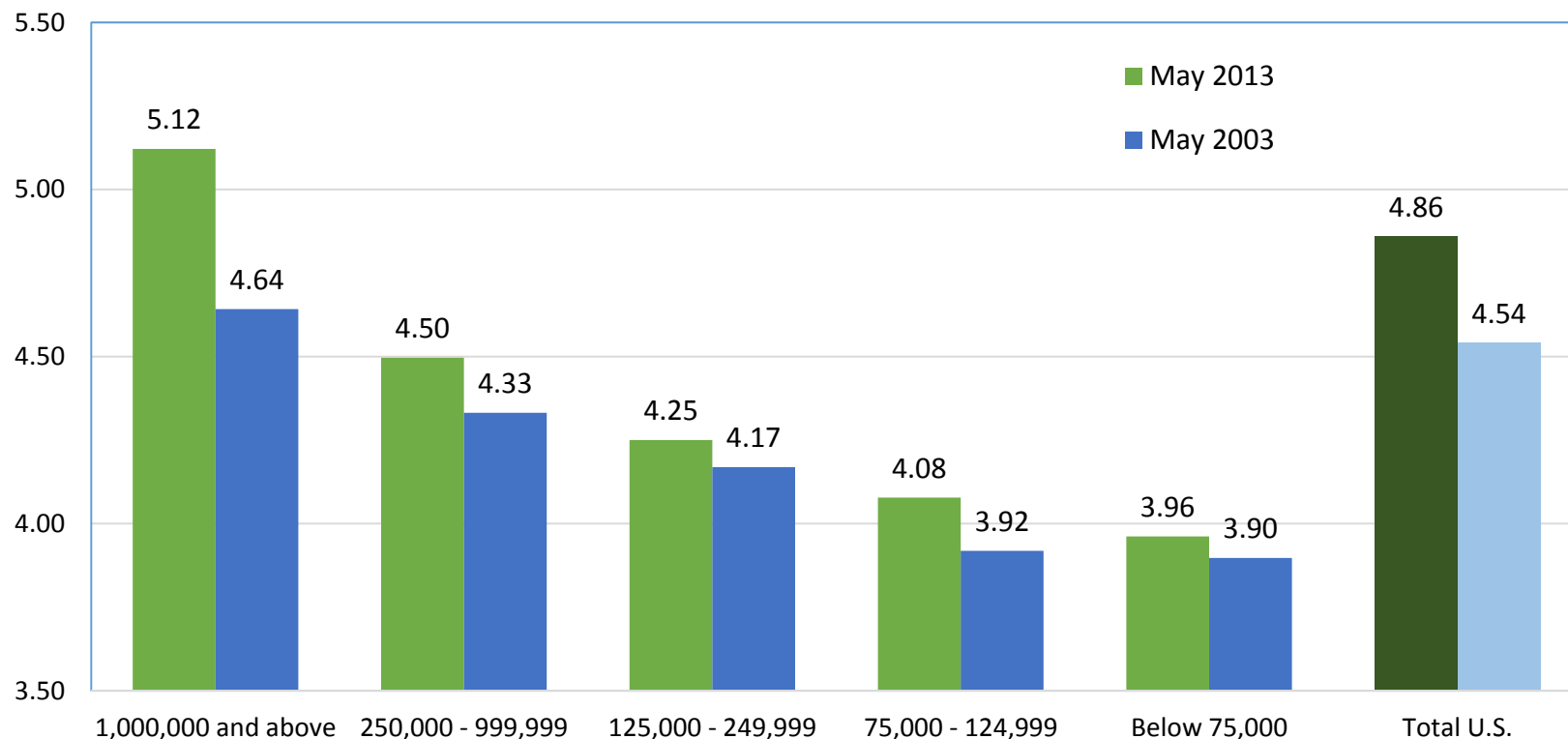
Change in metropolitan areas by size of area

- MSA sizes divided into 5 categories based on May 2013 employment
 - ▶ 1,000,000 or greater
 - ▶ 250,000 – 999,999
 - ▶ 125,000 – 249,999
 - ▶ 75,000 – 124,999
 - ▶ less than 75,000
- Wage ratios averaged across each MSA size category

2013 to 2003 MSA Comparison

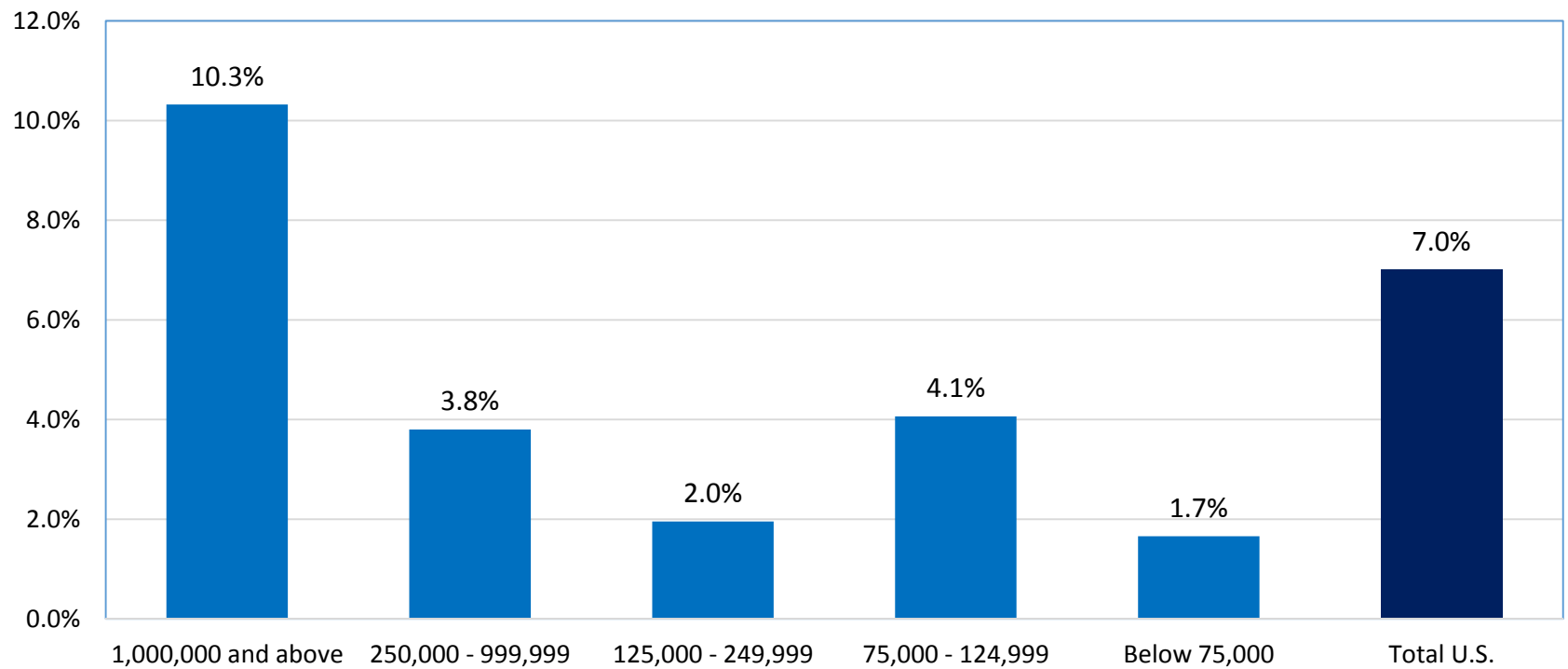
- Chose MSAs with no geographical difference between 2013 and 2003 definitions
- 137 MSAs, May 2013 employment
 - ▶ 13 with 1,000,000+
 - ▶ 13 with 250,000 – 999,999
 - ▶ 32 with 125,000 – 249,999
 - ▶ 25 with 75,000 – 124,999
 - ▶ 54 with less than 75,000

Average 90th/10th percentile wage ratio by MSA size



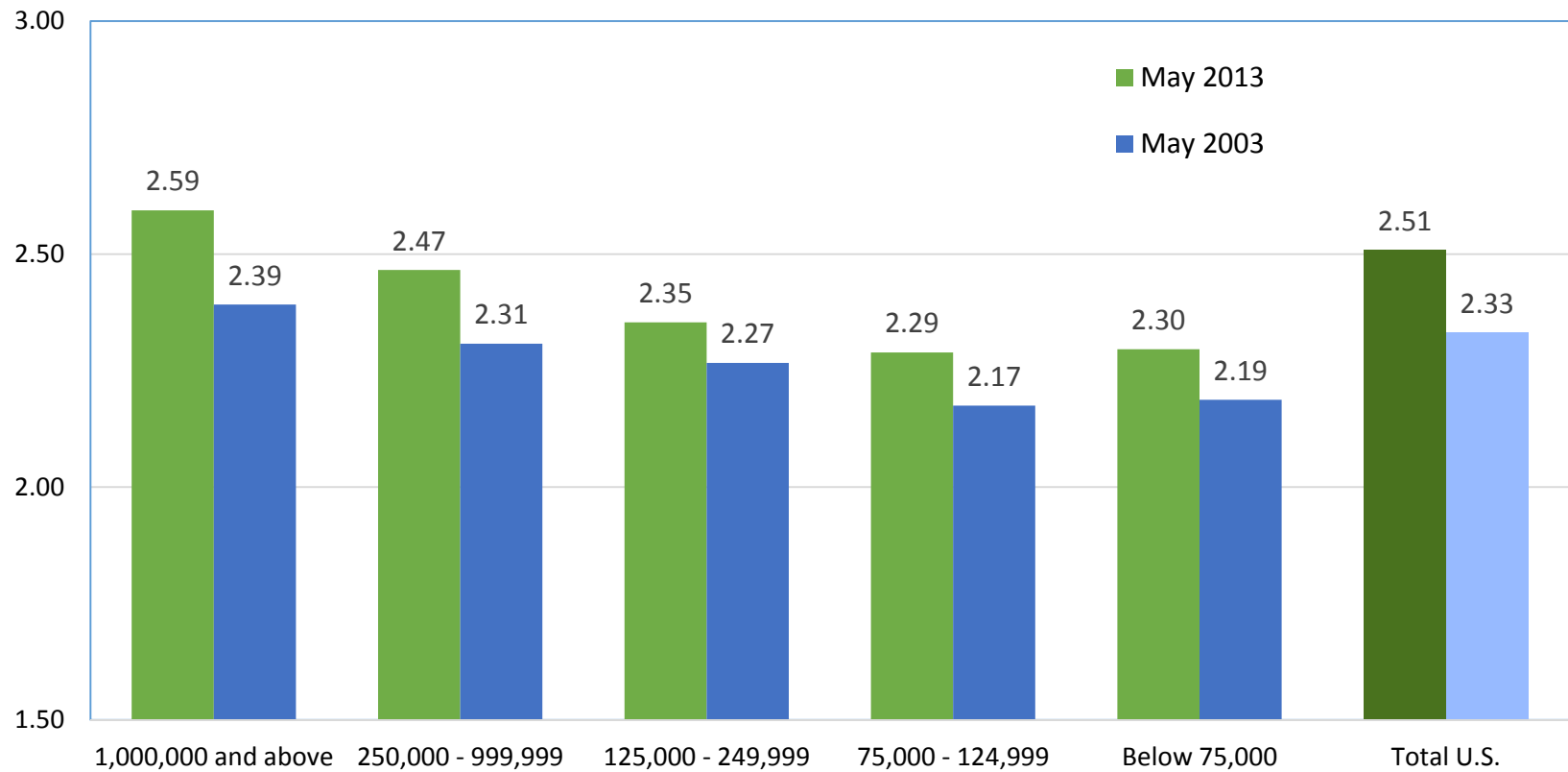
- Same wage ratio/MSA size relationship when averaging 90/10 gap ratios across MSA size categories
- Largest numerical increase for largest MSAs
- U.S. all occupations data reflect largest MSAs

Percent change in average 90th/10th percentile wage ratio, by MSA size, May 2003 to May 2013



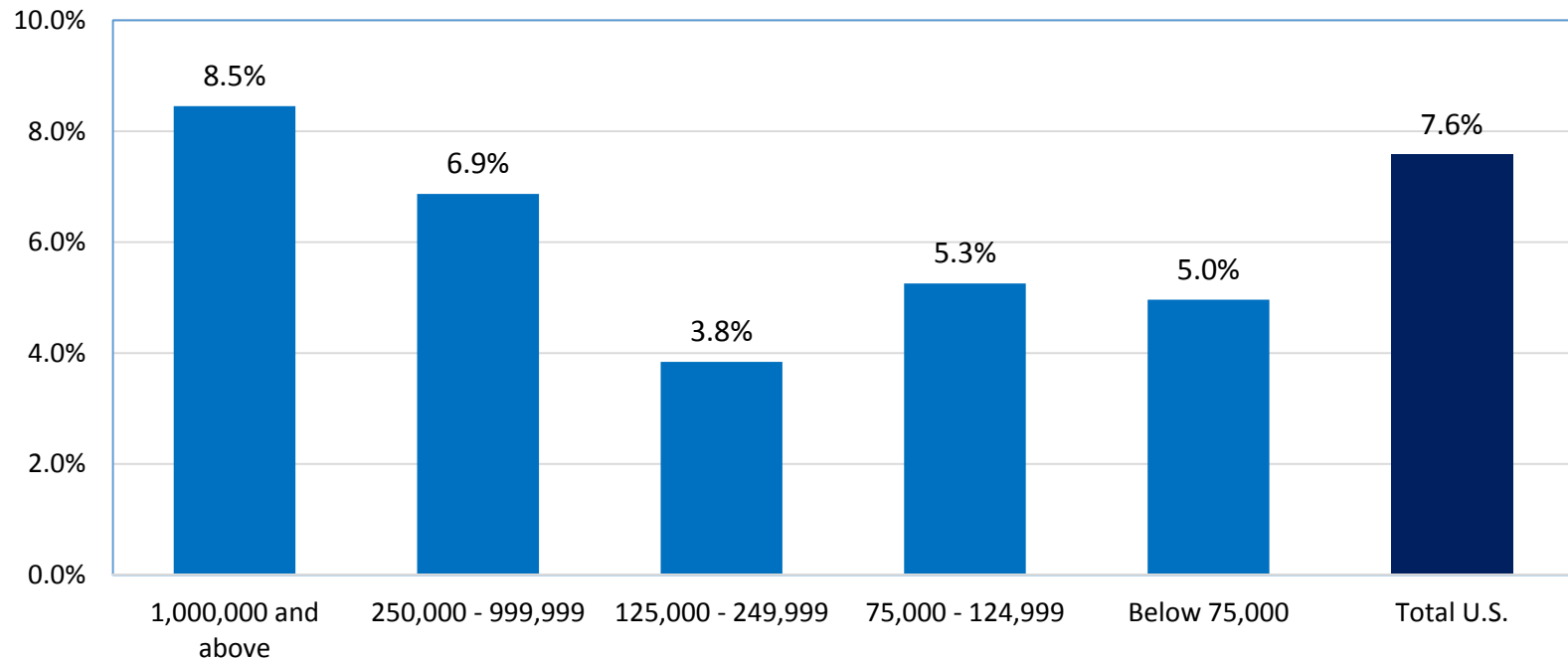
- Substantial increase in 90/10 wage ratio in largest MSAs
- All other MSA size categories show <5% increase
- Increase for U.S. all occupations between largest MSAs and all other MSA sizes

Average 75th/25th percentile wage ratio by MSA size



- Similar wage ratio/MSA size relationship when averaging 75/25 gap ratios across MSA size categories
- Largest numerical increase for largest MSAs, but also fairly sizeable for other MSA size categories

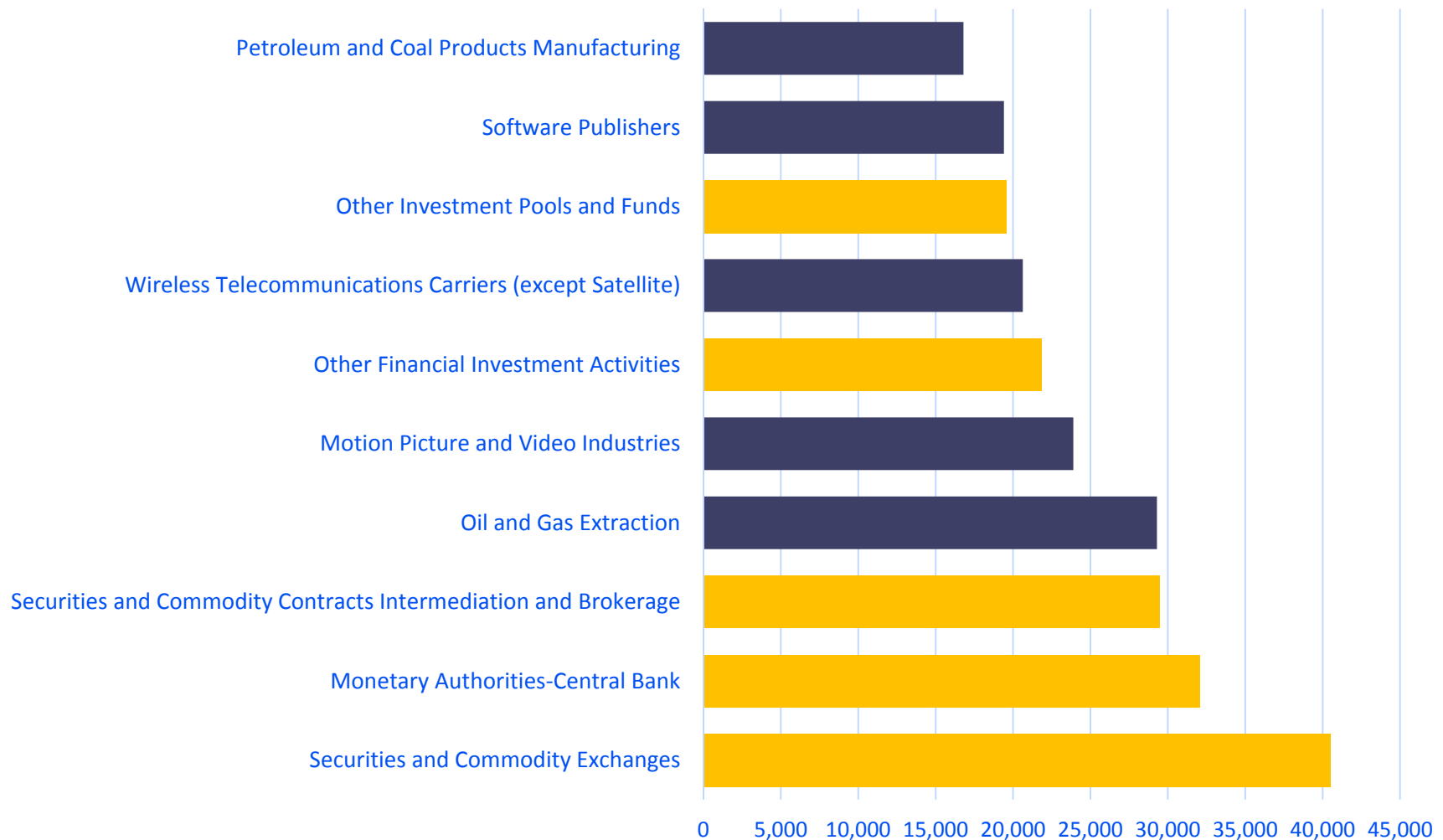
Percent change in average 75th/25th percentile wage ratio, by MSA size, May 2003 to May 2013



- Increase in 75/25 wage ratio less than 90/10 for largest MSAs, higher for all other MSA size classes
- Increase for U.S. all occupations still between largest MSAs and all other MSA sizes but difference is less pronounced

Industries with increases in 75-10 wage spread, 2005-2013

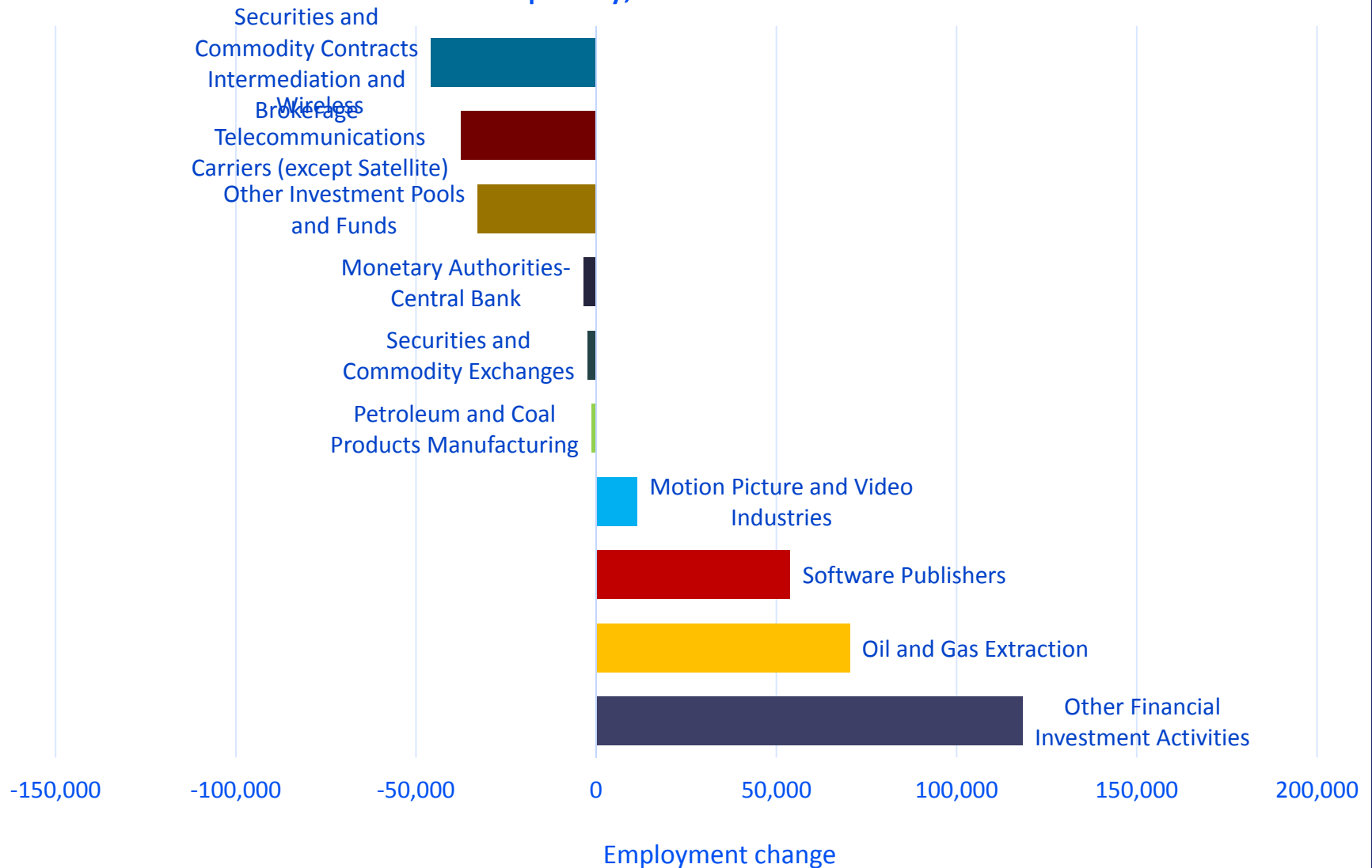
(Chart shows increase in spread)



- Employment declined in 6 of these industries

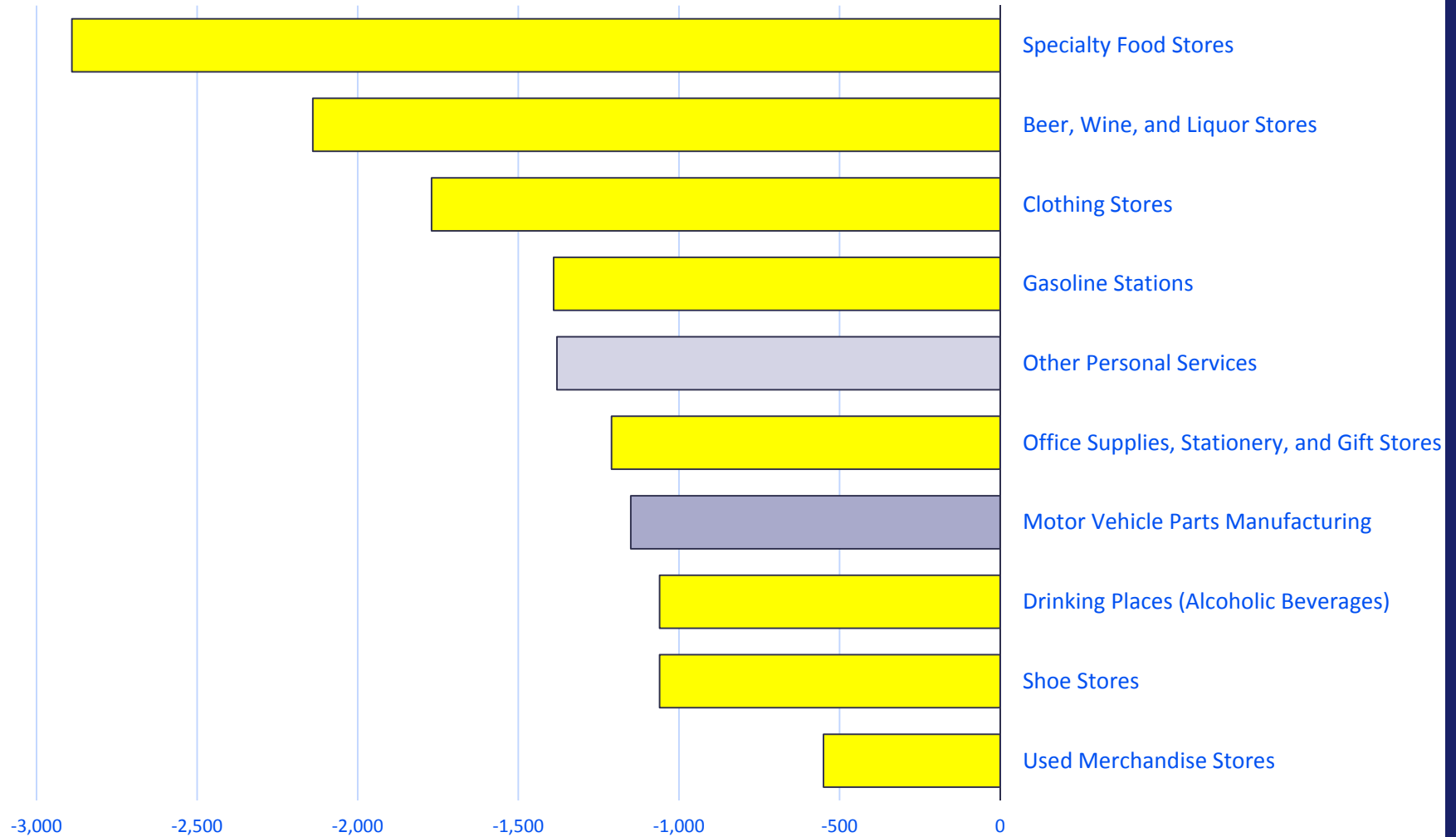
Orange indicates finance industries

Employment change for industries with increasing wage disparity, 2005 to 2013



Industries with decreases in 75-10 wage spread, 2005-2013

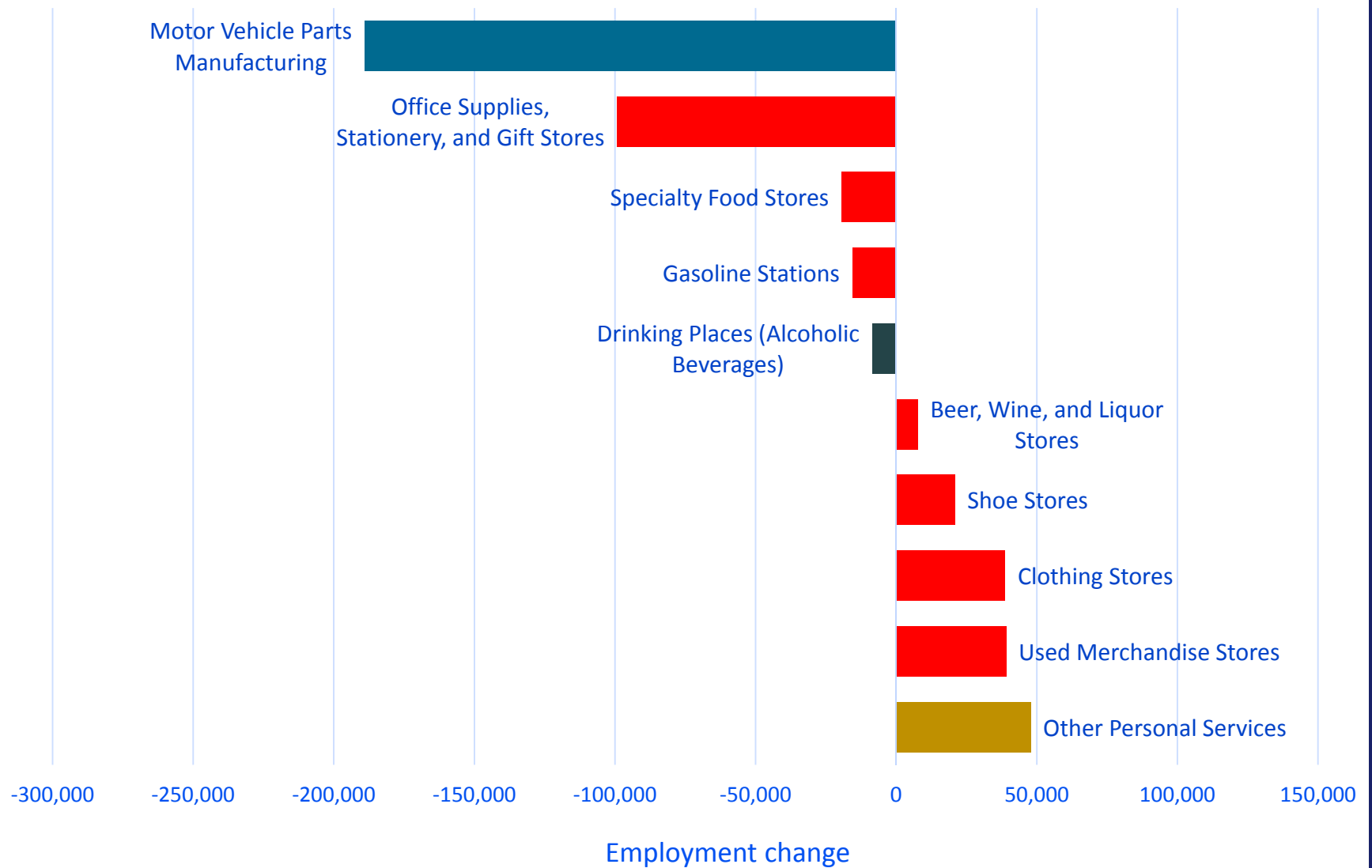
(Chart show decrease in spread)



- Employment declined in 5 of the 10 industries

Yellow indicates retail trade industries

Employment change for industries with decreasing wage disparity, 2005 to 2013



Questions

- Are OES data useful for measuring inequality?
- How might we improve the OES wage data?

Contact Information

Laurie Salmon
Bureau of Labor Statistics

202-691-6511

Salmon.laurie@bls.gov